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EXAMINER	
BOYD, JENNIFER A	

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/020,768
Filing Date: December 12, 2001
Appellant(s): GEEL, PAUL A.

Maria C. Gasaway
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 25, 2005 appealing from the Office action mailed February 24, 2005.

GB

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Argument

Appellant's brief includes arguments as set forth in 37 CFR 41.37(c)(1) and (c)(vii).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix of the brief is correct.

(9) Prior Art of Record

US 3,622,445 to Heidweiller

US 6,267,843 to Helwig et al.

US 5,800,675 to Kinsley, Jr.

US 5,935,879 to Helwig et al.

US 6,365,001 to Helwig et al.

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

Claims 1 – 8, 11, 13 - 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidweiller (US 3,622,445).

Heidweiller is directed to composite glass fiber webs.

As to independent claim 1, Heidweiller teaches a web comprising glass fibers and polyester fibers (Abstract). In Example II, the polyester fibers are polyethylene glycol terephthalate fibers (also known as polyethylene terephthalate fibers) which have a linear density of 1.5 denier (column 4, lines 1 – 5). Using the formula diameter (μm) = $\sqrt{}$(denier/(.00707 × density (cc)) and assuming a density of 1.38 cc for polyethylene terephthalate, the diameter of the fibers would be 12.4 μm. It is the position of the Examiner that 12.4 μm would meet Applicant's requirement of being "*about* 12 microns". The weight ratio between the glass fibers and the organic fibers, such as the polyethylene terephthalate fibers, ranges from 10:1 to 1:1 (Abstract). Thus, the glass fibers are present in a proportion of 50 - 100% and the polyethylene terephthalate fibers are present in a proportion of 10 – 50%. It should be noted that the amount of polyethylene terephthalate fibers disclosed by Heidweiller overlap with Applicant's claimed invention. The web also comprises a binder (Abstract). The binder can be selected from a great variety of materials including polyvinyl alcohol (column 2, lines 50 – 70). The polyvinyl alcohol

binder of Heidweiller is equated to the Applicant's "polyvinyl alcohol" and "secondary binder". The proportion of the binder is preferably 5 – 50 percent, calculated on the total weight of the web (Abstract).

As to claim 2, Heidweiller teaches that the glass fibers can be C-glass fibers or preferably E-glass fibers (column 1, lines 57 – 70).

As to claim 3, Heidweiller teaches that the E-glass fibers have a diameter of 4 – 15 microns (column 1, lines 60 – 65). In Example 1, the E-glass fibers have a length of 10mm (column 3, lines 20 – 25).

As to claim 4, Heidweiller teaches that the polyethylene terephthalate fibers have a length of 6 mm (column 4, lines 1 – 5).

As to claim 8, Heidweiller teaches that the binder can be in the form of fibers or water-dispersible granules (column 3, lines 1 – 5).

As to claim 11, Heidweiller teaches that the binder can be in the form of water dispersible granules, therefore, it could be a water-based emulsion or a solution-type binder.

As to claim 21, Heidweiller teaches a polyvinyl alcohol binder. As mentioned in the above paragraphs, the Examiner has equated to the binder to the "secondary binder" along with the polyvinyl alcohol.

As to claims 5 and 7, although Heidweiller does not explicitly teach the claimed properties that the polyethylene terephthalate fibers have a melting point above about 250 degrees Celsius as required by claim 5 and polyethylene terephthalate fibers do not melt below 220 degrees Celsius as required by claim 7, it is reasonable to presume that the polyethylene terephthalate fibers have a melting point above about 250 degrees Celsius as required by claim 5

and polyethylene terephthalate fibers do not melt below 220 degrees Celsius as required by claim 7is inherent to Heidweiller. Support for said presumption is found in the use of like materials (i.e. polyethylene terephthalate fibers having a diameter from about 6 to 16 microns) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties would obviously have been present once the Heidweiller product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

As to claims 1 and 13 - 18, Heidweiller discloses the claimed invention except for that the glass fibers are present in the weight of about 10 to less than 50% and the polyethylene terephthalate fibers have a diameter of from about 6 to 12 microns as required by claim 1, the glass fibers are present in the amount of 25 to 40 % by weight of the fibers as required by claim 13, the polyethylene terephthalate fibers are present in the amount of 60 – 75% by weight of the fiber as required by claim 14, the polyvinyl alcohol is present in the amount of 16 to about 20% by the total weight of the glass fibers and the polyethylene terephthalate fibers as required by claim 15, the secondary binder is provided in an amount of about 15 to 25% of the total weight of the base web as required by claim 16, the base web comprises glass fibers in the amount of 25 to about 40 percent by weight, polyethylene terephthalate fibers in the amount of 60 to about 75 % by weight and the polyvinyl alcohol in an amount of about 16 to about 20% by total weight of the glass fibers and the polyethylene terephthalate fibers as required by claim 17, the secondary binder is present in the amount of about 15 to about 25 of the total weight of the base web as required by claim 18. It should be noted that the combined total of polyvinyl alcohol and secondary binder in the web, the amount of PET fibers, the amount of glass fibers and the

diameter of the PET fiber are result effective variables. As the amount of the binder increases, the mat increases in strength and dimensional stability. As the amount of glass fibers increase, the compressive strength increases. As the amount of polyethylene terephthalate fibers increase, the tear strength increases. As the polyethylene terephthalate fiber diameter increases, the fiber becomes stronger and as the diameter decreases, the fiber becomes more pliable and softer to the touch. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a web with the glass fibers are present in the weight of about 10 to less than 50 % and the polyethylene terephthalate fibers have a diameter of from about 6 to 12 microns as required by claim 1, the glass fibers are present in the amount of 25 to 40 % by weight of the fibers as required by claim 13, the polyethylene terephthalate fibers are present in the amount of 60 – 75% by weight of the fiber as required by claim 14, the polyvinyl alcohol is present in the amount of 16 to about 20% by the total weight of the glass fibers and the polyethylene terephthalate fibers as required by claim 15, the secondary binder is provided in an amount of about 15 to 25% of the total weight of the base web as required by claim 16, the base web comprises glass fibers in the amount of 25 to about 40 percent by weight, polyethylene terephthalate fibers in the amount of 60 to about 75 % by weight and the polyvinyl alcohol in an amount of about 16 to about 20% by total weight of the glass fibers and the polyethylene terephthalate fibers as required by claim 17, the secondary binder is present in the amount of about 15 to about 25 of the total weight of the base web as required by claim 18, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the amount of polyvinyl alcohol, secondary binder,

glass fibers and polyethylene terephthalate fibers to create a pliable, strong, highly dimensionally stable web with high tear and compressive strength.

Claims 19, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidweiller (US 3,622,445) in view of Helwig et al. (US 6,267,843).

As to independent claim 22, Heidweiller teaches a web comprising glass fibers and polyester fibers (Abstract). In Example II, the polyester fibers are polyethylene glycol terephthalate fibers (also known as polyethylene terephthalate fibers) (column 4, lines 1 – 5). The weight ratio between the glass fibers and the organic fibers, such as the polyethylene terephthalate fibers, ranges from 10:1 to 1:1 (Abstract). Thus, the glass fibers are present in a proportion of 50 - 100% and the polyethylene terephthalate fibers are present in a proportion of 10 – 50%. It should be noted that the amount of polyethylene terephthalate fibers disclosed by Heidweiller overlap with Applicant's claimed invention. The web also comprises a binder (Abstract). The binder can be selected from a great variety of materials including polyvinyl alcohol (column 2, lines 50 – 70). The polyvinyl alcohol binder of Heidweiller is equated to the Applicant's "polyvinyl alcohol" and "secondary binder".

Heidweiller fails to disclose that the polyvinyl alcohol binder in fiber form has a diameter of from about 6 to 16 microns and a length from 4 to about 25 mm.

Helwig et al. teaches a wet-laid nonwoven mat comprising glass fibers, polymeric binder fibers and/or powder and optionally polyvinyl alcohol (column 1, lines 55 – 63). The polyvinyl alcohol binder fiber can be type VPB101 from Kuraray Co (column 5, lines 5 – 15). According to Yamamoto et al. (US 4,483,976), Kuraray VPB101 has a denier of 1.3 and length of 4mm

(column 5, lines 58 – 63). Assuming a density of 1.26 g/cm^3 as stated in *Polymers – A Property Database*, the fiber diameter is 12 microns.

It would have been obvious and necessary for one of ordinary skill in the art practicing the invention of Heidweiller to provide the details of the polyvinyl alcohol binder in fiber form. As the size and length of the binder fibers determine the strength of the bound web fibers, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use binder fibers with a length of 4 mm and a fiber diameter of 12 microns as suggested by Helwig in the invention of Heidweiller motivated by the expectation of successfully practicing the invention of Heidweiller.

Heidweiller in view of Helwig discloses the claimed invention except for that the polyvinyl alcohol fiber has a diameter of between about 6 and 11 microns as required by claim 23 and the base web has about 10 to less than 50% by weight of glass fibers as required by claim 22. It should be noted that the diameter of the polyvinyl alcohol fiber and the weight percentage of glass fibers are result effective variables. As the diameter increases, the fiber becomes stronger and as the diameter decreases, the fiber becomes more pliable. As the amount of glass fibers increase, the compressive strength increases. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a polyvinyl alcohol fiber with a diameter of between about 6 and 11 microns as required by claim 23 and the base web has about 10 to less than 50% by weight of glass fibers as required by claim 22, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention,

one would have been motivated to create a mat having a polyvinyl alcohol fiber with a diameter between 6 and 11 microns and 10 to less than 50% by weight of glass fibers in order to create a strong and pliable fiber mat with suitable compressive strength.

Claims 20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidweiller (US 3,622,445) in view of Kinsley, Jr. (US 5,800,675).

As to independent claim 24, Heidweiller teaches a web comprising glass fibers and polyester fibers (Abstract). In Example II, the polyester fibers are polyethylene glycol terephthalate fibers (also known as polyethylene terephthalate fibers) (column 4, lines 1 – 5). The weight ratio between the glass fibers and the organic fibers, such as the polyethylene terephthalate fibers, ranges from 10:1 to 1:1 (Abstract). Thus, the glass fibers are present in a proportion of 50 - 100% and the polyethylene terephthalate fibers are present in a proportion of 10 – 50%. It should be noted that the amount of polyethylene terephthalate fibers disclosed by Heidweiller overlap with Applicant's claimed invention. The web also comprises a binder (Abstract). The binder can be selected from a great variety of materials including polyvinyl alcohol (column 2, lines 50 – 70). The polyvinyl alcohol binder of Heidweiller is equated to the Applicant's "polyvinyl alcohol" and "secondary binder". The proportion of the binder is preferably 5 – 50 percent, calculated on the total weight of the web (Abstract).

Heidweiller fails to disclose that the polyvinyl alcohol binder in powder form has a particle size from about 50 to 250 microns.

Kinsley, Jr. teaches a paper-based product comprising a particulate binder (Abstract). The preferred binder is a polyvinyl alcohol powder (Abstract). The binder has a dry size diameter of 88 – 220 microns and a swollen size diameter of 176 – 440 microns.

It would have been obvious and necessary for one of ordinary skill in the art practicing the invention of Heidweiller to provide the details of the polyvinyl alcohol binder in powder form. As the size of the binder particles determine the strength of the bound web fibers, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a binder with a dry size diameter of 88 – 220 microns as suggested by Kinsley, Jr. in the invention of Heidweiller motivated by the expectation of successfully practicing the invention of Heidweiller.

Heidweiller in view of Kinsley, Jr. discloses the claimed invention except for that the base web has about 10 to less than 50% by weight of glass fibers. It should be noted that the weight percentage of glass fibers are result effective variables. As the amount of glass fibers increase, the compressive strength increases. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create the base web having about 10 to less than 50% by weight of glass fibers, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to create a mat having a base web comprising from 10 to less than 50% by weight of glass fibers in order to create a mat with suitable compressive strength.

Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helwig et al. (US 5,935,879).

Helwig is directed to a non-woven fiber mat suitable for reinforcing resilient sheet floor coverings, such as vinyl floor coverings (Abstract).

As to claim 1, Helwig teaches a non-woven wet-laid mat (column 2, lines 35 – 40) comprising reinforcement fibers including glass fibers and synthetic fibers (column 2, lines 35 – 50). Helwig teaches that the synthetic fiber can comprise polyester (column 2, lines 45 – 50), or specifically, polyethylene terephthalate (Example 5, lines 60 – 68). Helwig teaches that the polyethylene terephthalate fibers used in Example 5 are 1.7 dtex (1.53 denier). It should be noted that the fibers would have a diameter of approximately 12.6 microns assuming a density of 1.35 g/cc. Helwig teaches that one or more binders may be used to binder the reinforcement fibers (column 2, lines 53 – 55). Helwig teaches that the binders can be in particle form such as polyvinyl alcohol powder and fiber form such as vinyl chloride copolymer or a combination of both (column 2, lines 59 – 65). Helwig teaches that the binder may include a preliminary binder to bind the reinforcement fibers together to enable the sheet to be subsequently processed into a fiber mat. The Examiner equates the polyvinyl alcohol powder to Applicant's "polyvinyl alcohol". The polymeric binder may also include a secondary binder to bond the reinforcement fibers to provide the fiber mat with substantial resistance to planar elongation and yet still allow a substantial degree of planar compressive movement (column 3, lines 45 – 55).

As to claim 6, Helwig teaches that the synthetic fibers can be aramid fibers (column 5, lines 16 – 21).

Helwig discloses the claimed invention except for that the web has glass fibers in the amount of 10 to less than 50 percent by weight, the polyethylene terephthalate fibers have a diameter of from about 6 to 12 microns and are present in the amount of 50 – 90% by weight required by claim 1. It should be noted that the combined total of polyvinyl alcohol and secondary binder in the web, the amount of PET fibers, the amount of glass fibers and the diameter of the PET fiber are result effective variables. As the amount of glass fibers increase, the compressive strength increases. As the amount of polyethylene terephthalate fibers increase, the tear strength increases. As the polyethylene terephthalate fiber diameter increases, the fiber becomes stronger and as the diameter decreases, the fiber becomes more pliable and softer to the touch. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create the web has glass fibers in the amount of 10 to less than 50 percent by weight, the polyethylene terephthalate fibers have a diameter of from about 6 to 12 microns and are present in the amount of 50 – 90% by weight required by claim 1, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the amount of PET fibers and glass fibers and the diameter of the PET fibers to create a web with an appropriate level of pliability, tear strength and compressive strength.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Helwig et al. (US 5,935,879) in view of Helwig et al. (US 6,365,001).

Helwig et al. (US 5,935,879) teaches the claimed invention above except fails to disclose that the secondary binder can comprise acrylic, ethylene vinyl acetate or any mixtures thereof

Helwig et al. (US 6,365,001) is directed to a wet-laid nonwoven mat suitable for vinyl floor coverings (Abstract). Helwig '001 teaches a base mat formed from a mixture of glass fibers, polymeric binder fibers and/or powder with a treatment of a second water-based polymeric binder composition (Abstract). Helwig '001 teaches that the secondary binder provides additional strength and dimensional stability to the web during the initial stages of processing and is selected to provide the desired compressive behavior (column 3, lines 25 - 45). Helwig '001 teaches the use of a secondary binder such as a vinyl acetate ethylene copolymer (column 4, lines 30 - 40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use vinyl acetate ethylene copolymer as suggested by Helwig '001 as the secondary binder of Helwig '879 to create web with additional strength and dimensional stability during processing and possessing the desired level of compressive behavior which is crucial in floor covering applications.

(11) Response to Argument

Applicant argues that the present invention differs from Heidweiller in two respects. First, Applicant argues that claim 1 requires that the base web includes about 10 to less than 50% by weight glass fiber while Heidweiller discloses a web of greater than 50% by weight glass fibers. Second, Applicant argues that claim 1 requires that the polyethylene terephthalate fibers have a diameter from about 6 to 12 microns while Heidweiller teaches pile fibers having

thickness of 1.5 to 50 denier (12.4 – 71.5 microns). In regards to the base web glass fiber content, the Examiner agrees that *In re Woodruff* is not controlling. However, the Examiner continues to submit that the amount of glass fiber present in the base web is a result effective variable and is optimizable to Applicant's claimed range as supported by *In re Boesch*. Applicant points out that the Heidweiller reference was issued in 1971, almost 34 years ago. The Examiner considers this argument to be irrelevant. Although the reference may be considered "old", the Heidweiller reference demonstrates that is has been well-known in the art to use glass fibers in floor coverings for a certain amount time. Furthermore, Heidweiller recognizes that synthetic fibers such as polyethylene terephthalate can be combined with glass fibers for manufacturing floor coverings. The Examiner indicated in the rejection that as the amount of glass fibers present in the mat increase, the compressive strength increases and as the amount of polyethylene terephthalate fibers increase, the tear strength increases. The Examiner has used this reasoning to determine that the amount of glass fiber can be optimized in order to create a mat with an appropriate balance of tear and compressive strength, both concerns of floor covering. The Applicant neglected to contest the Examiner's reasoning so it appears that the Applicant agrees with the Examiner's rationale. In regards to the diameter of the polyethylene terephthalate fibers, the Examiner submits that if one can interpret the pile fibers of Heidweiller to be equivalent to Applicant's "polyethylene terephthalate fibers", the claim limitations have been met. Applicant indicates that the pile fibers of Heidweiller have a diameter of 12.4 – 71.5 microns. It should be noted that Applicant claims the use of polyethylene terephthalate fibers having a diameter of from *about* 6 to *about* 12 microns. It is known by one of ordinary skill in the art that the term "about" means reasonably close to of in the vicinity of. Therefore, it is the position of the

Examiner that 12.4 microns can meet the limitations of "about 12 microns". Alternatively, the Examiner continues to submit that the diameter of the polyethylene terephthalate fibers is a result effective variable and is optimizable to Applicant's claimed range. Applicant has failed to provide arguments that the diameter of the polyethylene terephthalate fibers is not a result effective variable and not obvious to optimize. In regards to both the glass fiber content and the polyethylene terephthalate fiber diameter, Applicant has not provided a contribution to the art but only has suggested an alternative. In Applicant's Specification, the Applicant discusses prior art glass mats and embodiments of the glass/polyethylene terephthalate mats of the present invention. Applicant indicates that the mats of the present invention has improved tear strength, improved resistance against moisture and rot, improved appearance and improved stain resistance. It should be noted that Applicant suggests in the Specification the use of about 10 to about 80% glass fibers and about 20 to about 90% by weight of polyethylene terephthalate fibers (see page 2, lines 15 – 25). Applicant's own Specification implies that the use of the amount of greater than 50% glass fibers can also result in Applicant's desired improved properties such as improved tear strength, improved resistance to moisture and rot, improved appearance and improved stain resistance which is taught by Heidweiller. The Applicant has not demonstrated how the inclusion of 10 to less than 50 percent by weight glass fibers and using polyethylene terephthalate fibers having a diameter of about 6 to about 12 microns would result in these improved properties while a prior art mat such as the mat of Heidweiller would not. The burden is upon the Applicant to demonstrate that the claimed range is critical and has unexpected results. If the claimed ranges have unexpected results, the burden is upon the Applicant to demonstrate that the claimed ranges are not a matter of simple optimization. Once again, the Examiner highly

suggests to the Applicant to submit a 37 CFR 1.132 Declaration to establish unexpected results. In the Declaration, the Applicant should compare a sufficient number of tests both inside and outside the claimed range to show the criticality of the claimed range. *In re Hill*, 284 F.2d 955, 128 USPQ 197 (CCPA 1960) and must compare the claimed subject matter with the closest prior art to be effective to rebut a prima facie case of obviousness.

Applicant argues that Heidweiller does not teach or suggest a base web which includes glass fibers in the amount of 25 – 40% by weight as required by claim 13, 60 – 75% by weight of polyethylene terephthalate fibers as required by claim 14 and about 20 to about 40% by weight glass fibers and about 60 to about 75% by weight of polyethylene terephthalate fibers as required by claim 17. The Examiner agrees that the ranges as claimed are not continuous with the ranges disclosed by Heidweiller. The Examiner agrees that *In re Woodruff* is not controlling. However, the Examiner continues to submit that the amount of glass fiber and polyethylene terephthalate fiber present in the base web are result effective variables and are optimizable to Applicant's claimed range as supported by *In re Boesch*. Once again, the Examiner highly suggests to the Applicant to submit a 37 CFR 1.132 Declaration to establish unexpected results. In the Declaration, the Applicant should compare a sufficient number of tests both inside and outside the claimed range to show the criticality of the claimed range. *In re Hill*, 284 F.2d 955, 128 USPQ 197 (CCPA 1960) and must compare the claimed subject matter with the closest prior art to be effective to rebut a prima facie case of obviousness.

Applicant argues that Helwig (US 6,267,843) teaches providing a mat with 50 – 90% glass fibers while claim 1 requires 10 to less than 50% by weight glass fibers. Furthermore, Applicant argues that claim 19 requires about 25 – 40% glass fibers, about 60 – 75%

polyethylene terephthalate fibers, about 16 – 20% polyvinyl alcohol on the total weight and additionally that the polyethylene terephthalate fibers have a diameter from about 6 to about 12 microns. It should be noted that Helwig is relied upon as a secondary reference to provide motivation for using a polyvinyl alcohol binder in fiber form having a diameter of from about 6 to 16 microns and a length from 4 to about 25 mm. Helwig is not intended to provide a teaching of the amount glass fibers, polyethylene terephthalate fibers and polyvinyl alcohol or the diameter of the polyethylene terephthalate fibers.

Applicant argues that claims 22 and 23 like claim 1 refers to a base web including less than 50% by weight glass fibers. Please see the arguments above concerning the teachings of Heidweiller.

Applicant argues that Heidweiller in view of Kingsley fails to teach or suggest a web or mat with 10 to less than 50% by weight glass fibers as required by claims 20 and 24. Please see the arguments above concerning the teachings of Heidweiller. It should be noted that Kingsley, Jr. is used to provide motivation to use a polyvinyl alcohol binder in powder form having a particle size from about 50 to 250 microns and it not intended to provide a teaching for use of polyethylene terephthalate fibers or the diameter of the polyethylene terephthalate fibers.

Applicant argues that Helwig (US 5,935,879) does indicate that the mat can comprise a combination of glass and synthetic fibers but fails to provide a ratio between the two. Applicant notes that Helwig '879 indicates "it is desirable for most, if not all, of the reinforcement fabric to be made of glass". Applicant notes examples in Helwig '879 that provide for 100% glass fiber reinforcement mats and one example having a 80% glass fiber mat. It should be noted that

disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). Applicant argues that the PET fibers of Example 5 have a diameter of approximately 12.6 microns which is greater than the about 6 to about 12 microns claimed by Applicant. It should be noted that Applicant claims the use of polyethylene terephthalate fibers having a diameter of from *about* 6 to *about* 12 microns. It is known by one of ordinary skill in the art that the term "about" means reasonably close to of in the vicinity of. Therefore, it is the position of the Examiner that 12.6 microns can meet the limitations of "about 12 microns". Alternatively, the Examiner continues to submit that the diameter of the polyethylene terephthalate fibers is a result effective variable and is optimizable to Applicant's claimed range. Applicant has failed to provide arguments that the diameter of the polyethylene terephthalate fibers is not a result effective variable and not obvious to optimize.

Applicant argues that Helwig '879 in view of Helwig '001 do not teach the claimed invention. Please see the arguments above concerning the teachings of Helwig '879.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Jennifer Boyd

Jennifer Boyd

Ula Ruddock
ULA RUDDOCK
PRIMARY EXAMINER

Conferees:

Terrel Morris -TM

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